

**AN IMPROVED LOOK-UP TABLE APPARATUS TO PERFORM TWO-BIT  
ARITHMETIC OPERATION INCLUDING CARRY GENERATION**

**Abstract Of The Disclosure**

A look-up table apparatus is provided for performing two-bit arithmetic operation including carry generation. The look-up table is modified to perform  
5 two concurrent combinatorial functions, or one function for an increased number of inputs. The look-up table of the present invention can implement two full adders or subtractors, or two-bit counters, for example. One portion of the modified look-up table provides two bits  
10 of a sum output, and another portion of the modified table provides a fast carry out signal for application to a next stage of an adder/subtractor/counter.

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